REMARKS/ARGUMENTS

Reexamination of the captioned application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicants:

1. Thank the Examiner for the indication of allowable subject matter of claims 9 – 10[1] and for the allowance of claims 23 – 24.
2. Amend claims 1-14 and 16 – 25.
3. Respectfully traverse all prior art rejections.

B. AMENDMENTS TO THE CLAIMS AND NEW CLAIMS

The rejected independent claims 1, 11, 13, 18, 19, 20, 21, 22, 25 have been amended to refer to a channel encoder which receives digital data in the form of packets from a data source and which encodes the digital data into channel encoded code symbols. Concerning method claims, please note inclusion of the channel encoder in new initial method step. These amendments are amply supported, e.g., by page 5, last paragraph, and Fig. 6 of the specification.

Independent claim 25 has been amended to recite a decoder which derives the control information from the data words, and a radio frequency transmitter element whose operation is controlled by the control information derived from the decoder. In terms of example support, see elements CI/CS DED and MOD, respectively, in Fig. 6.

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[1] Claims 9 -10 were objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claim (see the first paragraph under the heading "Allowable Subject Matter" of the Office Action).

New independent claim 33 is a broader version of amended independent claim 25, not including the number of bits, etc.

New dependent claims 32 and 34 specify that the radio frequency transmitter element whose operation is controlled by the control information derived from the decoder is a modulator. See, for example support, the second full paragraph of page 7 of the specification.

C. PATENTABILITY OF THE CLAIMS

Claims 1-8, 11-22 and 25-31 stand rejected under 35 USC 103(a) as being unpatentable over newly applied U.S. Patent 6,182,265 to Lim et al in view of newly applied U.S. Patent 5,506,866 to Bremer. All prior art rejections are respectfully traversed for at least the following reasons.

The independent claims continue to recite, as they did previously, that the combining means/combiner serves to combine channel encoded code symbols with respective control information. As an example implementation, and with reference to Fig. 6, for example, the channel encoded code symbols are combined with control information CI in a combining memory COM. The combined code words are then fed to an interleaving memory TM and the output BS is fed to a CDMA modulator MOD. The control information CI is used to control processing in a transmitter. As one example implementation (see page 7, second paragraph), a modulator MOD of the transmitter is controlled with the control information.

The second paragraph of the second enumerated section of the Office Action belies a basic misunderstanding regarding U.S. Patent 6,182,265 to Lim et al. The Office Action merely repeats the claim wording, and points to Fig. 3 of Lim and its associated description as allegedly disclosing a control information/code symbol encoding means

(i.e., convolutional encoder 12 of Lim). Both the allegations and reliance on Lim are erroneous.

A careful review of U.S. Patent 6,182,265 to Lim et al reveals the following: Element 7 of Fig. 1 of Lim is an interleaver. The further embodiments (Fig. 3) also use an interleaver 16, 17 constituted by two separate memories 16, 17 (see column 4, line 16 and in particular line 42-43). Element 12 of Lim is a convolutional encoder (see, e.g., column 4, line 47-48), taken for sake of argument to be a so-called channel encoder. The two separate interleaving memories 16, 17 are used for separately interleaving separate frames output from the parallel convolutional encoder 12 and de-multiplexed by the DMUX 15^2 (column 4, line 27-45). Thus, in its most favorable light for sake of argument, Lim essentially shows a channel encoder 12 and a subsequent interleaving memory 16, 17.

Applicants contend that Lim does not teach or suggest Applicants' claimed subject matter, such as (for example) the combining of code symbols output by a channel encoder with control information into control information/code symbol data word, with the control information/code symbol data word then being encoded and stored in a interleaving memory. (As explained in section B supra, all of Applicants' independent claims now explicitly refer to the channel encoder). Note by way of an example implementation, provision of convolution encoder CC upstream of both the combining means COM and the encoder CI/CS ENC in Applicants' Fig. 6.

The Office Action discusses elements of Lim's Fig. 3 in reverse order. The Office Action first alleges that Lim has an interleaver that interleaves code symbols and "control information associated with every code symbol the control information to be used to control processing in said transmitter...". But what specifically does the Examiner

consider to be the *control information*? How does this supposed control information control a *transmitter*? Where does Lim even hint or suggest that his apparatus is a transmitter? Or control a radio frequency transmitter? What transmitter elements of Lim are controlled by the control information?

The Office Action next alleges that Lim's DMUX receives encoded symbols and control signal. Despite allegations of the office action, Applicants do not find any teaching or suggestion that Lim's DMUX receives any control signal for controlling a transmitter. Applicants specifically inquire of the Examiner: where exactly in Lim is there any support for an allegation that Lim's DMUX 15 receives a mixture of encoded symbols and a transmitter control signal?

The Office Action further appears to allege that the claimed control information/code symbol encoding means is realized by convolutional coder 12 of Lim. In particular, the office action reads Lim as having

> "a DMUX (see Fig. 3 element 15) for receiving encoded symbols and control signal; convolutional coder is similar to the claimed control information/code symbol encoding means (see Fig. 3 element 12) for encoding..."

Contrary to the allegations of the office action, Applicants stress that Lim's convolutional coder 12 *outputs only code symbols, not transmitter control signals.* As such Lim's convolutional coder 12 cannot be the claimed control information/code symbol encoder.

The Examiner properly admits that U.S. Patent 6,182,265 to Lim et al does not have the claimed combining means. The examiner then tries to incorporate a combining means from another reference, namely U.S. Patent 5,506,866 to Bremer.

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[2] This splitting of frames and the separate interleaving in the memories 16, 17 is believed to be unimportant for the present consideration.

U.S. Patent 5,506,866 to Bremer makes some mention of "control bits" (*see,* e.g., Fig. 6 and Fig. 7, 9 in connection with column 9, line 7-10 and column 10, line 58-67). In particular, it appears that Bremer's adder 135 adds some symbols and some control segments, i.e., fifty six symbols are serially arranged to fourteen control segment symbols (column 10, line 58-64).

Bremer's adder 135 does not fulfills the requirements of Applicants' claimed combining means. For example, Bremer does not clearly state that the adder 135 adds channel encoded code symbols with some control information. Moreover, it is not clear from Bremer (e.g., column 10, line 58-63) the adder 135 really COMBINES its received information into a *control information/code symbol data word*. Rather, Bremer merely states that different segments are used for the 56 symbols and the 14 control segment data. Thus, U.S. Patent 5,506,866 to Bremer really shows nothing more than the fact that control information and code information is sequentially output, i.e. in different periods one after another, from adder 135. Thus, Bremer does not show the function of "combining" in the sense of Applicants' claims. Nor does Bremer disclose that the adder receives *channel encoded* code symbols and control information.

Even if Bremer's adder 135 were somehow construed as combining means in the sense of Applicants' claims, there is no suggestion in Bremer or Lim that the adder 135 would be situated downstream from a channel coder and upstream from an encoder.

In the above regard, Bremer himself teaches neither channel coder or encoder. Bremer's control encoder 520 cannot be likened to a channel encoder (see column 10, line 21). In particular, column 10, line 28-30 of Bremer describe that the data encoder 525 only includes some well-known encoding techniques like scrambling, trellis-coding etc. to provide the sequence of data symbols. Applicants submit that a so-called trellis-coder is not the same thing as a channel encoder. And since Lim has no utilization of

transmitter control information at all, there is no hint that such an adder would even be needed, much less its location.

Therefore, from U.S. Patent 5,506,866 to Bremer the skilled person cannot detect at which position an adder or combiner should be situated in document Lim, since Bremer's Fig. 7 and Fig. 9 have no reference to a channel encoder. Moreover, Applicants note that the Bremer most likely is not a CDMA system.

Among other things, U.S. Patent 6,182,265 to Lim et al fails to teach or suggest the claimed combining means and the claimed control information/code symbol encoding means. Fig. 3 of Lim does not teach output of a combination of control information and code symbols from parallel convolutional encoder 12. Based on the disclosures of Lim and Bremer, the person skilled in the art has no reason at all to incorporate Bremer's adder 135 at the output of the parallel convolutional encoder 12. Bremer is from a different type of system, and moreover Bremer's adder 135 is disclosed as being the type of combining means required by Applicants' claims.

However, even if the skilled person were to introduce the adder 135 of Bremer at the output of the parallel convolutional encoder 12 of Lim, nevertheless the claimed control information/code symbol encoding means would still be absent and unsuggested.

Nor do the applied references, taken alone or in combination, teach or suggest a decoder for gleaning control information which is used to control operation of a transmitter element of a radio frequency transmitter element, as required by independent claims 25 and 33.

D. MISCELLANEOUS

In view of the foregoing and other considerations, the Examiner has ample bases for withdrawing all rejections and for allowance of all pending claims. Accordingly, a formal indication of allowance is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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